

Campground Well House Requirements

Issue

The requirements for a campground water supply system are contained in the Michigan Safe Drinking Water Act (MSDWA), 1976 PA 399, as amended, and the administrative rules adopted pursuant to the act. Also campground water supplies must meet the statutory provisions for campgrounds under the Michigan Public Health Code (MPHC), 1978 PA 368, as amended, and the administrative rules adopted pursuant to the act. The provisions for campground water supplies in the MPHC recognize campers use substantially less water than a typical residence, that most campground water systems are drained and not operated during the winter, and that most of these systems have a water distribution system to extend water service to sites, sanitary stations, service buildings, or other facilities. There are more than 1,000 campgrounds in Michigan that are classified as a Transient Noncommunity Water Supply (see Act 399 for the various classifications of public water supplies) and this document is to highlight the requirements for a campground well house serving this type of system.

Authority

The MPHC addresses the requirements for a campground well house. Specifically, Rule 9 (R 325.1559) states in part:

- (1) A campground owner shall provide a potable water supply . . .
- (2) . . . **a campground owner shall provide an above grade room that houses pumping equipment, provide equipment for the disinfection of the entire water system, provide sample taps, and provide pump-to-waste facilities for all wells.**

Well House Requirements

A campground well house shall be located **above grade**. This requirement prohibits the well house facilities from being located in a basement or any other location that is below the surrounding grade. This requirement went into effect in December of 2000 and provided 5 years for any campground well houses that were located below grade to be brought into compliance. Thus, all campground well houses should now be located above grade.

A **detail of a typical campground well house** is shown on the last page of this document. This detail helps illustrate the remaining discussions on well house requirements.

The detail shows **pump-to-waste** piping and valves. The pump-to-waste piping should be the same size or larger than the size of the line from the well into the well house. The location of the pump-to-waste piping upstream of the hydro-pneumatic storage tanks is also required. This allows for proper operation and maintenance to be provided. When repair of one of the wells is needed during the camping season, for example, the well can be disinfected and flushed without allowing this water into the campground's water distribution system. Also, this facilitates an annual check on the pumping rate from any well and provides an early warning if there is a substantial drop in the rate.

The detail shows **disinfection equipment** which includes an electrical outlet that is energized only when the water well pump is operating and also a chemical injection tap needed to inject chlorine into the campground's water system. These facilities would allow a chlorine pump and tank to easily be connected to disinfect the system.

Disinfection is required after the campground's water distribution system has been de-pressurized (drained) and before serving water to the campers after being de-pressurized, or may be required when positive bacteriological water sample results are obtained. Campground water systems are typically de-pressurized for winter or this may occur during a power outage of more than a few minutes. Positive water sample results may occur at any time. Please note the injection taps are

located upstream of the hydro-pneumatic storage tanks. This location provides a constant concentration of chlorine throughout the water system, and avoids a large slug of chlorine being injected into a part of the distribution system while all water from the well is recharging the storage tanks.

It is recognized that some campgrounds lack the disinfection equipment shown in the detail, and disinfection is accomplished by removing the well cap from the well's pitless adapter to introduce a chlorine solution into the well. This method will not work for all wells and may cause several problems for those wells where it will work. For a more detailed discussion, see "Disinfection of Seasonal Noncommunity Water Supplies" on the campground website.

The detail shows a **water meter**. This is not required for campgrounds unless there is chemical feed (treatment) or when flow monitoring is required under a discharge permit authorization for the campground's wastewater system. If a meter is installed, the meter must be located upstream of the hydro-pneumatic storage tanks to accurately reflect the amount of water being used. Otherwise the meter will show substantially less water than is actually being used.

The detail shows **sample taps** located where water from each well enters the well house. The sample taps at this location are required. The detail also shows a sample tap located just before the water leaves the well house and enters the distribution system. A sample tap at this location is required only when water treatment is provided, but one is suggested for all well houses.

Most campground wells are served by a submersible pump located toward the bottom of the well casing. There is a check valve located inside the well casing that prevents water in the hydro-pneumatic storage tanks from discharging back into the well. This check valve must be located inside the well casing. **Check valves** located inside the well house are prohibited unless the discharge pipe from the well is completely exposed and above grade.

The detail indicates the **hydro-pneumatic storage tanks** (pressure tanks) need to be sized to provide 2 minutes pump run time, and this is usually true where the pump is 5 HP or greater but not for smaller pumps. Consult the pump manufacturer for a final determination on the size of tank required.

Two types of devices that can provide relatively constant pressure at the well house have been introduced in recent years and are now commonly used for campground water systems as they provide certain advantages. The two types are **constant pressure valves** (CPV) and **variable frequency drives** (VFD). A reduction in the required size of the hydro-pneumatic tank can be approved for VFD installations in accord with the manufacturer's instructions, but not for CPV installations. For both types, a pressure gauge must be located downstream and the pressure setting of the device should maintain a minimum of 30 pounds per square inch of pressure for campground applications. Further, some PCV have an internal check valve. A device with an internal or external check valve cannot be installed outside of the well casing for most applications.

More information for Non-Community Water Supplies (the typical classification for water systems serving campgrounds) is available online at <http://www.michigan.gov/deqwb>, then select the link labeled [Noncommunity Water Supply](#).

The campground owner should contact the local health department or DEQ representative prior to making any **changes or modifications in the campground wells or well house**. A permit or approval may be required from the local health department and/or from the DEQ campground staff for such changes, and following this procedure will prevent the need for expensive upgrading to meet the requirements of the MSDWA and MPHIC. Contact information for the campground program staff in the DEQ is available online at <http://www.michigan.gov/deqwb>, then select the link labeled [Campgrounds & Pools](#).

CAMPGROUND WELL HOUSE DETAILS

